

REMARKS

Claim 10 has been amended herein. Claims 1-9 and 22-23 were previously cancelled without prejudice. Claim 24 is newly added. Subsequent to the entry of the present amendment, claims 10-21 are pending and at issue. The amendment adds no new matter, as the claim language is fully supported by the specification and original claims.

Rejection under 35 USC § 112, First Paragraph

Claims 10-21 were rejected under 35 USC § 112 as allegedly failing to comply with the written description requirement. Applicants respectfully traverse this rejection as it applies to amended claim 10, including claims depended therefrom, for the reasons given below.

The Office Action alleges that “produced in the absence” is not the equivalent of “not produced in the absence.” (Office Action, pages 2-3) Without acquiescing to the reasoning offered in the Office Action, in order to expedite prosecution towards allowance, Applicants have amended claim 10 to remove the language “not produced in the absence” and “produced in the absence.”

The Office Action further alleges that the specification does not “clearly describe the broadly claimed generic invention of the instant claims because there are insufficient relevant identifying characteristics correlated with sesquiterpene synthase activity which covers a multitude of unspecified isoprenoid synthase polypeptide domains and their respective reaction products” and “Applicants broadly claim DNA encoding a chimeric polypeptide that comprises two different unspecified domains taken from either a monoterpene, diterpene, or sesquiterpene synthase that would produce some unspecified sesquiterpene.” (Office Action, pages 3-4.) The Office Action also alleges that the “recitation of isoprenoid domains in claim 10 provides insufficient written description for a genus of chimeric polypeptides comprising a domain from a non-sesquiterpene syntasess that would synthesize sesquiterpenes.” (Office Action, page 6.)

Amended claim 10 recites a DNA encoding a chimeric isoprenoid sesquiterpene synthase polypeptide, wherein said chimeric isoprenoid sesquiterpene synthase polypeptide comprises two polypeptide domains: a first isoprenoid sesquiterpene synthase polypeptide domain joined to a second different isoprenoid sesquiterpene

synthase polypeptide domain such that the chimeric isoprenoid sesquiterpene synthase polypeptide encoded by the DNA catalyzes the production of at least one isoprenoid sesquiterpene synthase reaction product that is not produced by the first isoprenoid sesquiterpene synthase polypeptide domain alone.

Claim 10 clearly recites that the DNA contemplated by the invention encodes a chimeric isoprenoid sesquiterpene synthase polypeptide containing two isoprenoid sesquiterpene synthase domains. The claim does not recite that the claimed domains are taken from either a monoterpene or diterpene synthase, as alleged in the Office Action.

The specification provides guidance to a DNA encoding a chimeric isoprenoid sesquiterpene synthase polypeptide. For example, Figures 4 and 5 show chimeric isoprenoid sesquiterpene synthase constructs made from either TEAS or HVS sesquiterpene synthase polypeptide. Paragraphs [0037] to [0045] describe the construction of several chimeric sesquiterpene synthase constructs. Paragraphs [0047] to [0050] demonstrate that the expression products of the chimeric sesquiterpene synthase constructs are active.

The Examiner is required to satisfy the burden of demonstrating that the inadequate written description rejection is proper. See, *In re Wertheim*, 541 F.2d 257, 263, 191 USPQ 90, 97 (CCPA 1976). A strong presumption of adequacy of written description exists and §112, paragraph 1 rejections of a claim should be rare. See, MPEP §§ 2163(I)(A) and 2163(II)(A). It is respectfully submitted that in this case the Examiner has not met this burden. The description is considered adequate if “the disclosure of the application relied upon reasonably conveys to the artisan that the inventor had possession ... of the ... claimed subject matter [at the time of filing].” See, *Wang Labs Inc. v. Toshiba Corp.*, 993 F.2d 858, 26 USPQ2d 1767 (Fed. Cir. 1997). In other words, the question of the lack of adequate written description does not arise unless “one skilled in the art [would not be able] to immediately envisage the product claimed.” *Fujikawa v. Wattanasin*, 93 F.3d 1559, 39 USPQ2d 1895 (Fed. Cir. 1996). It is submitted that applying these broad principles to the present application, it can be unequivocally concluded that the written description in this application adequately supports the claims.

In view of the foregoing, the Applicants submit that the present specification contains a complete description of the invention sufficient to demonstrate that the Applicants, at the time the application was filed, had possession of the claimed invention. Accordingly, it is respectfully submitted that the rejection of claims 10-21 under 35 U.S.C. § 112, first paragraph, as allegedly lacking adequate written description, is not properly applied. Reconsideration and withdrawal of the rejection is therefore respectfully requested.

Claims 10-21 remain rejected under 35 U.S.C. §112, first paragraph, as allegedly lacking enablement. Applicants respectfully disagree.

Claims 10-21 recite DNA encoding a chimeric isoprenoid sesquiterpene synthase polypeptide. The Office Action has conceded that the specification is “enabling for a nucleic acid molecule encoding a for DNA encoding a chimeric isoprenoid sesquiterpene synthase polypeptide, wherein said chimeric isoprenoid synthase polypeptide comprises a first sesquiterpene synthase domain joined to a second different sesquiterpene synthase domain, astride a ratio determining domain of DDXXD, such that the chimeric isoprenoid sesquiterpene synthase polypeptide encoded by the DNA catalyzes the production of at least one isoprenoid reaction product that is not produced in the absence of the second isoprenoid synthase polypeptide; and vectors thereof, and plant cells and plants transformed therewith.” (Office Action, pages 6-7.)

Applicants agree with the assertion that the specification is enabled for a nucleic acid molecule encoding a for DNA encoding a chimeric isoprenoid sesquiterpene synthase polypeptide, wherein said chimeric isoprenoid synthase polypeptide comprises a first sesquiterpene synthase domain joined to a second different sesquiterpene synthase domain, such that the chimeric isoprenoid sesquiterpene synthase polypeptide encoded by the DNA catalyzes the production of at least one isoprenoid reaction product that is not produced in the absence of the second isoprenoid synthase polypeptide; and vectors thereof, and plant cells and plants transformed therewith. However, Applicants disagree that the specification requires “a ratio determining domain of DDXXD.” As detailed in the specification, the DDXXD motif is found within the aristolochene specific domain (Specification, paragraph [0055], not the ratio determining domain. As such, a recitation of “ a ratio determining domain of DDXXD” in the claim would be incorrect.

However, in an effort to advance prosecution of the present application, amended claim 10 currently recites a DNA encoding a chimeric isoprenoid sesquiterpene synthase polypeptide, wherein said chimeric isoprenoid sesquiterpene synthase polypeptide comprises two polypeptide domains: a first isoprenoid sesquiterpene synthase polypeptide domain joined to a second different isoprenoid sesquiterpene synthase polypeptide domain such that the chimeric isoprenoid sesquiterpene synthase polypeptide encoded by the DNA catalyzes the production of at least one isoprenoid sesquiterpene synthase reaction product that is not produced by the first isoprenoid sesquiterpene synthase polypeptide domain alone, which the Examiner has conceded was enabled.

In light of the amendments, Applicants respectfully request that the rejection, including as it may be applied to the amended claims, be withdrawn.

CONCLUSION

In view of the amendments and above remarks, it is submitted that the claims are in condition for allowance, and a notice to that effect is respectfully requested. The Examiner is invited to contact Applicant's undersigned representative if there are any questions relating to this application.

Fees for a two-month extension of time are submitted herewith. If any additional fees are due, the Commissioner is authorized to charge any fees, or make any credits, to Deposit Account No. 502235 referencing the above-identified attorney docket number.

Respectfully submitted,

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